PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	Understanding of and perceptions towards cardiovascular diseases and their risk factors: a qualitative study among residents of urban informal settings in Nairobi
AUTHORS	Wekesah, Frederick; Kyobutungi, Catherine; Grobbee, Diederick; Klipstein-Grobusch, Kerstin

VERSION 1 - REVIEW

REVIEWER	Yeunjung Kim Yale University USA
REVIEW RETURNED	04-Dec-2018

GENERAL COMMENTS	This qualitative study provides a glimpse into the lives of slum dwellers living in Nairobi. The manuscript is well written with a clear message. Sometimes qualitative studies are difficult to comment on its style. Personally, the use of somewhat quantitative descriptors such as some, many, widely, can be confusing to the reader. For example, saying some participants is very different from saying 2 out of 65 participants. This is a general comment so that the descriptive portion of the findings do not get biased into providing a convenient theme. Few points: - Abstract states that study enrolled individuals aged 30 years and above while method states individuals 20 years and older. (Was this a different sampling group for a particular question or typo?) - Abstract states that individuals were "not known to suffer from any CVD." In the "knowledge, understanding and awareness..." section, authors quote that some members discovered that they suffered from risk factors for CVD by chance (i.e. hypertension). I wonder about the known risks factors of CVD in the focus groups. Is this data available? Especially, this would be informative because authors state that the study was informed by prior findings where the public did not engage in services provided despite the availability of free and subsidized treatment (page 6, line 9-13). - Were there any differences between the study sites? It would be interesting to mention. - For the perception of obesity, the authors do not clearly state whether participants perceived obesity as a risk factor for CVD. This is an interesting area to explore because participants voice that poverty is the cause of CVD. Although being obesity is associated with wealth, do the participants know that obesity is also linked to CVD? (it may be assumed from the language, but it is not clearly stated like other risk factors.)

	- It is not clearly indicated whether the interviewers provided the risk factors for CVD or it was freely brought up by the participants when a context was given. The approach to the discussion on risk factors may strongly influence perception. (i.e. Interviewer says oil can cause CVD, and participants may agree. On the other hand, the interviewer may ask participants what foods can cause CVD and participants cannot bring up oil as a risk factor. It would be informative to know what approach was used. The appendix and interview guide can be more descriptive. Sometimes adding (to the manuscript) certain dynamics (between the interviewer and the group) may be informative.

REVIEWER	Dr N Peer Senior Specialist Scientist, South African Medical Research Council, South Africa
REVIEW RETURNED	04-Feb-2019

GENERAL COMMENTS	Abstract How were participants recruited? How was high risk for CVD defined? What CVD risk factors were considered? How many participants were there per focus group or in the study in total? Methods What was the participant selection criteria i.e. inclusion and exclusion criteria? There is a discrepancy between the abstract and main text – were participants older than 20 or 30 years? Who conducted the focus group discussions? Were these trained fieldworkers or expert qualitative research investigators? This is not clear. Page 6, lines 12-13: please specify which risk factors are being referred to in "…treatment for risk factors for CVD…". And does it include references to people who have had a heart attack or stroke together with hypertension/diabetes? Findings Another discrepancy between the abstract and main text – were there 9 or 11 focus groups? Page 6, lines 25-26: "Participants were not known to suffer from any CVD…" does this refer only to heart attack and stroke or does it include CVD risk factors such as hypertension, diabetes, etc. Please elucidate. The same refers to "…family and community members with CVD". Page 7: "…some respondents thought that stroke was actually the cause for hypertension. This is demonstrated in the quotes below." I do not agree with the authors on their conclusions; I cannot see the link in the quote that followed. There is no mention of stroke per se in the quotes. Page 11, lines 33-34: "…CVD conditions being untreatable…" This is rather vague and not applicable across the board. While CVD risk factors of hypertension and diabetes are treatable, stroke,

	usually after 24 hours, is irreversible. Therefore, it is important to be specific in the condition/risk factor being discussed. Page 11, lines 51-55: This sentence is unclear. Please expand on what is meant by "…the seeming inaction in strategies employed by community members to prevent CVD". Please also remember that knowledge does not necessarily translate into action. Page 12, line 48: "…perceived stigma towards CVD…" Why is there stigma towards CVD and which conditions specifically? Page 12 and 13, lines 54 onwards: "…widespread substance use, especially alcohol consumption and other drugs have contributed to low levels of screening for CVD risk factors…" Why is this so? I don't agree with the authors on their interpretation of the participant's statement (Page 13, lines 7-9). I would interpret it simply as "people who drink alcohol may perhaps be less likely to be tested". There is no mention, and if there was it would simply be hearsay/opinion and not fact, about widespread use of alcohol directly impacting on screening for CVD risk factors. The authors need to clearly describe which beliefs were correct and which were false. Discussion Page 16, lines 4-8: "Rampant poverty, illiteracy and ignorance…" These are objective measures that are easily quantifiable and should be assessed as such. How were these evaluated in a qualitative study? Obtaining such information from a qualitative study, I believe, is inappropriate and simply a matter of opinion. "…were listed as the most important risk factors for CVD in the urban slum community" – risk factors for CVD should be determined in a quantitative and not a qualitative study. Knowledge or awareness of risk factors may be ascertained in a qualitative study. However, that is not what the authors are alluding to here. A qualitative study is well suited to untangle "…the perceived stigma directed at the conditions and the taboo associated with speaking about the conditions in public". Unfortunately, however, the authors do not do this, and the reader remains mystified and unenlightened as to the reasons for CVDs to be associated with "stigma" and "taboo". Page 16, line 22: "Poor diet was caused by lack of access to healthy foods…" No data are presented in the findings/results section to substantiate such a conclusion in this study. Lines 29-33: "The slum… this community". The authors need to be clear and wary about the conclusions drawn from their qualitative data. If participants mention that emotional stress is a risk factor for CVD, the only conclusions that the authors may draw from this is whether this is a correct observation or not. They cannot conclude that participants were stressed if this was not objectively measured. Page 16, lines 50-52: "Effective treatment-seeking…was hindered by widespread lack of knowledge on where to find health care services" – once again, I could not find this data in the results section.

	Page 16, lines 20 onwards: What is the relevance, in a qualitative study, of the perception that CVD risk factors are gender-related? It remains unclear what the take home message from this study is. What are the "…important insights into how CVD risk and risk factors are understood in a low resource urban setting"? And what has this study added on "how the understanding and perception affects treatment-seeking and management for CVD in the community"? Overall comments Unfortunately, I believe that this is a poorly conceptualised and conducted study with incorrectly/inappropriately drawn conclusions. The authors have not clearly stated what conditions were discussed in this paper. If it was simply CVD, as it appears from the write-up, then that is rather vague and makes for difficult interpretation of the findings. The authors should have asked about specific risk factors individually and not as a group/cluster.

VERSION 1 – AUTHOR RESPONSE

Reviewer 1:

Reviewers comments	Action taken	Page: line numbers
Abstract states that study enrolled individuals aged 30 years and above while method states individuals 20 years and older. (Was this a different sampling group for a particular question or typo?)	We have corrected the mistake. The age of the study respondents ranged from 20 to 65 years of age.	2:7 7:3
Abstract states that individuals were "not known to suffer from any CVD." In the "knowledge, understanding and awareness..." section, authors quote that some members discovered that they suffered from risk factors for CVD by chance (i.e. hypertension). I wonder about the known risks factors of CVD in the focus groups. Is this data available? Especially, this would be informative because authors state that the study was informed by prior findings where the public did not engage in services provided despite the availability of free and subsidized treatment (page 6, line 9-13).	Authors regret the confusion caused here. FGD participants mentioned that other community members were late in seeking care of CVD conditions, including diabetes, hypertension, or realised they had the conditions when being treated for stroke and heart attacks. FGD participants were included from healthy members of the community: if they were not diagnosed with/did not suffer any of the conditions stated above. This has been rewritten and clarified.	2: 6-9
Were there any differences between the study sites? It would be interesting to mention.	We hope this concern is addressed in clarification above. Since we did not screen participants for the FGDs on the known risks factors of CVD, we therefore cannot provide the site differences on the same.	NA

For the perception of obesity, the authors do not clearly state whether participants perceived obesity as a risk factor for CVD. This is an interesting area to explore because participants voice that poverty is the cause of CVD. Although being obesity is associated with wealth, do the participants know that obesity is also linked to CVD? (it may be assumed from the language, but it is not clearly stated like other risk factors.)	The section has been rewritten to capture the opinion by the respondents that obesity was linked to hypertension, and hypertension to conditions such as heart attack.	11: 28-29
It is not clearly indicated whether the interviewers provided the risk factors for CVD or it was freely brought up by the participants when a context was given. The approach to the discussion on risk factors may strongly influence perception. (i.e. Interviewer says oil can cause CVD, and participants may agree. On the other hand, the interviewer may ask participants what foods can cause CVD and participants cannot bring up oil as a risk factor. It would be informative to know what approach was used. The appendix and interview guide can be more descriptive. Sometimes adding (to the manuscript) certain dynamics (between the interviewer and the group) may be informative.	In the introduction of the FGDs, the researchers explained the CVD conditions to include hypertension, diabetes, stroke and heart attacks (see FGD guide), but the behavioural risk factors were sought from the respondents. We also sought to know the how the risk factors were interrelated. We have added in the FGD guide the probes that were employed to explore the phenomena of CVD risk factors and outcomes, knowledge, understanding and perceptions on who is at risk.	5: 23-28 6: 1-4
REVIEWER 2:		
Abstract		
How were participants recruited?	The information on the recruitment of participants has been added in the manuscript.	2: 6-9
How was high risk for CVD defined? What CVD risk factors were considered?	The statement, linked to age of the participants, has been dropped from the abstract because of its potential to mislead. The statement intended to communicate that age is in itself a risk factor for CVD i.e. the older one gets the higher their risk of suffering CVD conditions.	2: 6-9
How many participants were there per focus group or in the study in total?	This information has since been added in the abstract. It was earlier included only in the results section.	2: 8-9
Methods		
What was the participant selection criteria i.e. inclusion and exclusion criteria?	Being a purposive sample, we targeted individuals that reported to be healthy, aged 20 or older, and living in the study community. This information has been added in the methods section.	5: 9-16
There is a discrepancy between the abstract and main text – were participants older than 20 or 30 years?	We acknowledge the oversight on this and have made the corrections. The age of the participants ranged	2:7 5:11

	from 20 – 65. Majority of the participants (60/65) were however aged between 30 and 65 years.	
Who conducted the focus group discussions? Were these trained fieldworkers or expert qualitative research investigators? This is not clear.	The information on who conducted the interviews has been added in the manuscript. For the record, the researcher led the interviews, supported by trained research assistants experienced in qualitative research.	5: 24-27
Page 6, lines 12-13: please specify which risk factors are being referred to in "…treatment for risk factors for CVD…". And does it include references to people who have had a heart attack or stroke together with hypertension/diabetes?	We have since clarified that we refer to high blood cholesterol, diabetes and hypertension as risk factors for CVD that patients could be treated for, and the CVD outcomes are stroke and heart attacks, heart failure and angina.	7: 10-13
Findings		
Another discrepancy between the abstract and main text – were there 9 or 11 focus groups?	This has since been corrected and revised appropriately. The correct position is that there were 9 FGDs. Data from 2 pilot FGDs were not included in the analysis for this paper.	7: 2
Page 6, lines 25-26: "Participants were not known to suffer from any CVD…" does this refer only to heart attack and stroke or does it include CVD risk factors such as hypertension, diabetes, etc. Please elucidate. The same refers to "…family and community members with CVD".	Authors meant to communicate that healthy individuals (who were not diagnosed with diabetes, hypertension, stroke and heart attacks) were included in the FGDs. We did not screen the participants to confirm their health status. This has since been deleted to avoid confusion.	NA
Page 7: "…some respondents thought that stroke was actually the cause for hypertension. This is demonstrated in the quotes below." I do not agree with the authors on their conclusions; I cannot see the link in the quote that followed. There is no mention of stroke per se in the quotes.	We have revised the section to be consistent with the quotes/data used in the writing of the manuscript. The statement on stroke and hypertension, as it is not discussed in this manuscript, has been removed.	8: 4-13
Page 11, lines 33-34: "…CVD conditions being untreatable…" This is rather vague and not applicable across the board. While CVD risk factors of hypertension and diabetes are treatable, stroke, usually after 24 hours, is irreversible. Therefore, it is important to be specific in the condition/risk factor being discussed.	This is clearly a case of the difficulty of reporting perceptions and opinions of study participants without passing judgement of right or wrong. We have since stated that it was a misconception, based on what we know, but it still remains a 'truth' from the respondents.	12: 28-33
Page 11, lines 51-55: This sentence is unclear. Please expand on what is meant by "…the seeming inaction in strategies employed by community members to prevent	We have revised the sentence for clarity. We agree that knowledge does not necessarily relate to action, but what we argue here is that misinformation/lack of knowledge is	13: 8-12

CVD". Please also remember that knowledge does not necessarily translate into action.	actually a barrier to necessary action to screen for and to seek care and treatment for CVD conditions.	
Page 12, line 48: "…perceived stigma towards CVD…" Why is there stigma towards CVD and which conditions specifically?	This section has been expanded and more information provided on why and the source of stigma certain CVD conditions in the community.	14: 8-13
Page 12 and 13, lines 54 onwards: "…widespread substance use, especially alcohol consumption and other drugs have contributed to low levels of screening for CVD risk factors…" Why is this so? I don't agree with the authors on their interpretation of the participant's statement (Page 13, lines 7-9). I would interpret it simply as "people who drink alcohol may perhaps be less likely to be tested". There is no mention, and if there was it would simply be hearsay/opinion and not fact, about widespread use of alcohol directly impacting on screening for CVD risk factors.	We have adopted the suggestion provided by the reviewer. We have limited the interpretation based on the data/quote provided, but wish to restate that this information on the relationship between alcohol and diabetes and hypertension, although not provided in this paper, were provided by respondents.	14: 13-19
The authors need to clearly describe which beliefs were correct and which were false.	We have attempted to present this in results, but discuss the misconceptions further in discussion section.	NA
Discussion		
Page 16, lines 4-8: "Rampant poverty, illiteracy and ignorance…" These are objective measures that are easily quantifiable and should be assessed as such. How were these evaluated in a qualitative study? Obtaining such information from a qualitative study, I believe, is inappropriate and simply a matter of opinion. "…were listed as the most important risk factors for CVD in the urban slum community" – risk factors for CVD should be determined in a quantitative and not a qualitative study. Knowledge or awareness of risk factors may be ascertained in a qualitative study. However, that is not what the authors are alluding to here.	We have rephrased the first paragraph of the discussion. We mean to say here that poverty, illiteracy and ignorance were the underlying drivers of CVD burden in the community. These were certainly discussed as risk factors for CVD by the respondents, although technically they are not based on what we know. The reviewer is right that we present an opinion, which is indeed what we did.	17: 2-14
A qualitative study is well suited to untangle "…the perceived stigma directed at the conditions and the taboo associated with speaking about the conditions in public". Unfortunately, however, the authors do not do this, and the reader remains mystified and unenlightened as to the reasons for CVDs to be associated with "stigma" and "taboo".	We have since explained the sources for stigma against conditions such as stroke in the community in the results section, and discussed this further in the discussion. We hope this clarifies the issue raised by the reviewer.	14: 8-13 17: 17-20
Page 16, line 22: "Poor diet was caused by lack of access to healthy foods…" No data are presented in the findings/results section to substantiate such a conclusion in this study.	We have added supporting data to this assertion in the results section, and have discussed it better in the discussion.	12: 17-24 17: 24-25

Lines 29-33: "The slum… this community". The authors need to be clear and wary about the conclusions drawn from their qualitative data. If participants mention that emotional stress is a risk factor for CVD, the only conclusions that the authors may draw from this is whether this is a correct observation or not. They cannot conclude that participants were stressed if this was not objectively measured.	We appreciate this comment from the reviewer, and agree that we may wrongfully interpreted the sentiments of the respondents. We have rewritten the section to communicate better what we initially meant to say.	17: 28-29 18: 1-3
Page 16, lines 50-52: "Effective treatment-seeking…was hindered by widespread lack of knowledge on where to find health care services" – once again, I could not find this data in the results section.	The section has been clarified, dropping the notion of effectiveness and reporting that respondents indicated lack of information on where to find care for CVD conditions.	18: 10-15
Page 16, lines 20 onwards: What is the relevance, in a qualitative study, of the perception that CVD risk factors are gender-related?	The section has been rewritten, with the information added that individual perception of their general health and risk to their health determines actions they take to mitigate the risk. For CVD, if one gender perceives their risk as low, they may not take necessary actions to address the risk.	18: 24-29 19: 1
It remains unclear what the take home message from this study is. What are the "…important insights into how CVD risk and risk factors are understood in a low resource urban setting"? And what has this study added on "how the understanding and perception affects treatment-seeking and management for CVD in the community"?	The authors set out to explore understanding of risk factors and risk for CVD, exploring opinions and perceptions from general (healthy) community members. With the clarifications provided in the revised manuscript, we hope the paper as is currently captures and communicates these aims.	NA

VERSION 2 – REVIEW

REVIEWER	Yeunjung Kim Yale University
REVIEW RETURNED	23-Mar-2019

GENERAL COMMENTS	The manuscript was well written, and the objectives were clearly defined. There is an inherent difficulty in qualitative studies of providing objectivity to the different sentiments found in the population. It is a difficult task; however, I worry that sometimes to create a coherent narrative, ideas may become biased without quantitative information. Although this is a general comment, it applies to this manuscript as well. For example, "respondents" may mean two participants or all participants, a major difference in the weight of the finding. It is not necessary to give an N value for each statement; however, highlighting some statements with descriptors such as the "majority" or All or "few" will give some sense of the prevalence of the sentiment.

	Although the study provides interesting insights into the 2 locations in Nairobi. The content and similarities to prior publications make it a bit hard to accept as a novel publication. The overall message of poor perception of risks in a low resource population with some cultural perspectives appears similar to the available literature originating from sub-Saharan Africa. This is not to dismiss the findings specific to this study... The discussion does not provide any background on the novelty of its findings. It lacks the description of why this population was targeted (i.e. generally healthy younger more female), and authors do not provide any thoughts on whether this population represents the majority of those living in the poverty-stricken areas of Nairobi. Although there is an attempt to highlight the necessity of this study, it falls short of providing concrete applications of how findings may be linked to policy measures. For example, the conclusion of the abstract could be approrpriate for any paper looking at perceptions of CVD risk in a lower resource setting. Hence, what makes this study unique and what makes it applicable for the general audience? Strong qualitative studies provide more than a list of themes and a summary. It provides an integration of themes, which provides insight into underlying issues within the whole narrative. Then, it provides some set of concrete actions or it may allude to something concrete which could be acted on. Does this study provide this type of thought-provoking analysis? I think the ingredients are there and the paper can be more compelling with further development and revision to present a more coherent picture. Noted typos: page 17, text line 10 page 18, text line 1

REVIEWER	Nasheeta Peer South African Medical research Council, South Africa
REVIEW RETURNED	01-Apr-2019

GENERAL COMMENTS	I thank the authors for incorporating the suggested changes. The paper is much easier to read and understand now. General I would prefer it if you would use CVDs and their risk factors rather than “CVD risk and risk factors”, please, throughout the paper. Abstract: The objectives in the clean, and track and change copies do not match. I prefer “…and in seeking and adhering to treatment” from the original abstract/still present in the track and change copy rather than “…and in treatment and care-seeking” in the clean copy. Conclusion: 1st sentence is very wordy and not very coherent, unfortunately. Perhaps 2 sentences would be easier to understand for the reader. Page 18-19, lines 25 onwards – this sentence is very long. If possible, please make 2 sentences for easier reading.

	Page 19, line 22-26: Again, this sentence is long and wordy and should be rephrased for ease of reading and understanding. Two sentences should be better. There are a few minor grammatical errors throughout the paper e.g. Page 19, line 22: I think 'programming' should rather read 'programmes'

VERSION 2 – AUTHOR RESPONSE

Reviewer 1:

Reviewer's comments	Action taken	Page/line
1. There is an inherent difficulty in qualitative studies of providing objectivity to the different sentiments found in the population. It is a difficult task; however, I worry that sometimes to create a coherent narrative, ideas may become biased without quantitative information. Although this is a general comment, it applies to this manuscript as well. For example, "respondents" may mean two participants or all participants, a major difference in the weight of the finding. It is not necessary to give an N value for each statement; however, highlighting some statements with descriptors such as the "majority" or All or "few" will give some sense of the prevalence of the sentiment.	1. We have revisited the transcripts to check the quotes/narratives used in our manuscript, and to appropriately indicate whether the sentiments were convergent i.e. shared by the group (FGD), or were divergent or shared by few or one member of the focus group discussions. 2. The paper has been redeveloped, and suggested terms that indicate the weight of the sentiments adopted, to the extent possible and where relevant, across the revised manuscript.	NA
2. The discussion does not provide any background on the novelty of its findings. It lacks the description of why this population was targeted (i.e. generally healthy younger more female), and authors do not provide any thoughts on whether this population represents the majority of those living in the poverty-stricken areas of Nairobi. 3. Although there is an attempt to highlight the necessity of this study, it falls short of providing concrete applications of how findings may be linked to policy measures. For example, the conclusion of the abstract could be appropriate for any paper looking at perceptions of CVD risk in a lower resource setting.	1. We have included in the background of the discussion a reiteration on why the urban slum population was targeted for this study. 2. We have also redeveloped the section on research and policy implications of our findings.	
4. Hence, what makes this study unique and what makes it applicable for the general audience? Strong qualitative studies provide more than a list of	We have made an attempt to integrate the key and dominant themes, with the emerging themes discussed in our findings, across the manuscript. We	NA

themes and a summary. It provides an integration of themes, which provides insight into underlying issues within the whole narrative. Then, it provides some set of concrete actions or it may allude to something concrete which could be acted on. Does this study provide this type of thought-provoking analysis? I think the ingredients are there and the paper can be more compelling with further development and revision to present a more coherent picture.	have revisited the key findings, showed how the themes integrate to paint the bigger picture regarding the perceptions towards cardiovascular diseases and their risk factors, aligning them with the original objectives of our work.	
Noted typos: page 17, text line 10 page 18, text line 1	Typographical errors, together with other editorial mistakes have been addressed through a thorough proof-read and re-reading of the manuscript.	NA

Reviewer 2:

Reviewer's comments	Action taken	Page: line
General comment: I would prefer it if you would use CVDs and their risk factors rather than "CVD risk and risk factors", please, throughout the paper.	This has been adopted across the document.	NA
Abstract: The objectives in the clean, and track and change copies do not match. I prefer "…and in seeking and adhering to treatment" from the original abstract/still present in the track and change copy rather than "…and in treatment and care-seeking" in the clean copy. Conclusion: 1st sentence is very wordy and not very coherent, unfortunately. Perhaps 2 sentences would be easier to understand for the reader.	1. The tracked and clean copies have been harmonised. 2. The suggestions on rewriting the sentences have been adopted.	2: 20-25
Page 18-19, lines 25 onwards – this sentence is very long. If possible, please make 2 sentences for easier reading.	The suggestions on revising and rewriting the sentences and the sections have been adopted.	15: 21-25
Page 19, line 22-26: Again, this sentence is long and wordy and should be rephrased for ease of reading and understanding. Two sentences should be better.	The suggestions on revising and rewriting the sentences and the sections have been adopted.	16: 6 - 11
There are a few minor grammatical errors throughout the paper e.g. Page 19, line 22: I think 'programming' should rather read 'programmes'	The typographical errors, together with other editorial mistakes have been addressed through a thorough proof-read and re-reading of the manuscript.	21: 1